Claims:

1. A communication device, comprising:

a signal modulator/demodulator having a digital signal processor for effecting radio communications; and

an application processor (AP) having a central processing unit and a master controller for controlling via a common bus a plurality of peripherals including an interface with the signal modulator/demodulator.

2. The device of claim 1, wherein a memory shared by the modem and the AP is controlled via the interface.

3. The device of claim 2, wherein the shared memory is an SDRAM.

4. The device of claim 1, wherein the plurality of peripherals include at least one of an image capture module, a display, and a flash memory.

5. The device of claim 1, wherein the master controller controls the plurality of peripherals by issuing a packetized command commonly receivable by the plurality of peripherals over the common bus, the packetized command includes a module device select signal used for selecting one of the peripherals.

6.    The device of claim 5, wherein the selected one of the peripherals returns a signal to the master controller to acknowledge receipt of the packetized command.

7.    The device of claim 5, wherein the packetized command includes a read/write command to a memory shared by the modem and the AP.

8.    The device of claim 7, wherein data read from the shared memory is sent to the AP with a strobe signal, the strobe signal is used for strobing the data read into a register in the master controller.

9.    The device of claim 3, wherein the SDRAM includes a plurality of data banks and an interface for interfacing the master controller.

10.    The device of claim 3, wherein the SDRAM includes a protection circuit for receiving address data from the AP and the modem and for generating a protect signal upon receiving the same address from the modem and the AP.

11.    A communication device, comprising:

a signal modulator/demodulator having a digital signal processor for effecting radio communications; and

an application processor (AP) having a central processing unit and a
master controller for controlling via a first bus at least one peripheral and via a
second bus a memory shared by the modem and the AP.

5   12. The device of claim 11, wherein the master controller further
controls via the second bus a flash memory.

   13. The device of claim 11, wherein the at least one peripheral is an
image capture module.

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   14. The device of claim 11, wherein the master controller controls a
plurality of peripherals by issuing a packetized command commonly receivable
by the plurality of peripherals over the common bus, the packetized command
includes a module device select signal used for selecting one of the peripherals.

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   15. The device of claim 14, wherein the selected one of the peripherals
returns a signal to the master controller to acknowledge receipt of command.

   16. The device of claim 14, wherein the packetized command includes
20  a read/write command to the memory shared by the modem and the AP.

17.    The device of claim 16, wherein data read from the shared memory is sent to the master controller with a strobe signal, the strobe signal is used for strobing the data read into a register in the master controller.

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18.    The device of claim 11, wherein the shared memory is an SDRAM.

19.    The device of claim 18, wherein the SDRAM includes a plurality of data banks and an interface for interfacing the master controller.

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20.    The device of claim 18, wherein the SDRAM includes a protection circuit for receiving address data from the AP and the modem and for generating a protect signal upon receiving the same address from the modem and the AP.

21.    An application processor (AP) for use in a communication device,

15    the application processor comprises:

a central processing unit for processing data received from a plurality of peripherals; and

a master controller for controlling via a common bus the plurality of peripherals and for interfacing with a signal modulator/demodulator (modem) via

20    the common bus.

22.    The device of claim 21, further including a memory, the memory being shared by the modem and the AP.

23. The device of claim 22, wherein the shared memory is an SDRAM.

24. The device of claim 21, wherein the plurality of peripherals include at least one of an image capture module, a display, and a flash memory.

25. The device of claim 21, wherein the master controller controls the plurality of peripherals by issuing a packetized command commonly receivable by the plurality of peripherals over the common bus, the packetized command includes a module device select signal used for selecting one of the peripherals.

26. The device of claim 25, wherein the selected one of the peripherals returns a signal to the master controller to acknowledge receipt of the packetized command.

27. The device of claim 25, wherein the packetized command includes a read/write command to a memory shared by the modem and the AP.

28. The device of claim 27, wherein data read from the shared memory is sent to the AP with a strobe signal, the strobe signal is used for strobing the data read into a register in the master controller.

29.     The device of claim 23, wherein the SDRAM includes a plurality of data banks and an interface for interfacing the master controller.

30.     The device of claim 23, wherein the SDRAM includes a protection circuit for receiving address data from the AP and the modem and for generating a protect signal upon receiving the same address from the modem and the AP.

31.     An application processor (AP) for use in a communication device, the application processor comprises:

a central processing unit for processing data received from a plurality of peripherals; and

a master controller for controlling via a first bus the plurality of peripherals and for interfacing with a signal modulator/demodulator (modem) via a second bus.

32.     The device of claim 31, further including a memory, the memory being shared by the modem and the AP.

33.     The device of claim 32, wherein the shared memory is an SDRAM.

34.     The device of claim 31, wherein the plurality of peripherals include at least one of an image capture module, a display, and a flash memory.

35.     The device of claim 31, wherein the master controller controls the plurality of peripherals by issuing a packetized command commonly receivable by the plurality of peripherals over the common bus, the packetized command includes a module device select signal used for selecting one of the peripherals.

36.     The device of claim 35, wherein the selected one of the peripherals returns a signal to the master controller to acknowledge receipt of the packetized command.

37.     The device of claim 35, wherein the packetized command includes a read/write command to a memory shared by the modem and the AP.

38.     The device of claim 37, wherein data read from the shared memory is sent to the AP with a strobe signal, the strobe signal is used for strobing the data read into a register in the master controller.

39.     The device of claim 33, wherein the SDRAM includes a plurality of data banks and an interface for interfacing the master controller.

40.     A method of controlling a communication device having a signal modulator/demodulator (modem) for effecting radio communications and an application processor (AP) having a central processing unit and a master controller, comprising:

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controlling via a common bus in the master controller a plurality of

peripherals; and

interfacing with the signal modulator/demodulator via the common bus.

41.     The method of claim 40, wherein the step of interfacing includes

interfacing a memory shared by the modem and the AP.

42.     The method of claim 40, wherein the shared memory is an SDRAM.

43.     The method of claim 40, wherein the step of controlling includes

controlling at least one of an image capture module, a display, and a flash

memory.

44.     The method of claim 40, wherein the step of controlling includes

issuing a packetized command commonly receivable by the plurality of

peripherals over the common bus, the packetized command includes a module

device select signal used for selecting one of the peripherals.

45.     The method of claim 44, wherein the selected one of the

peripherals returns a signal to the master controller to acknowledge receipt of the

packetized command.

46. The method of claim 40, wherein the packetized command includes a read/write command to a memory shared by the modem and the AP.

47. The method of claim 40, wherein data read from the shared memory is sent to the AP with a strobe signal, the strobe signal is used for strobing the data read into a register in the master controller.

48. The method of claim 41, further including receiving address data from the AP and the modem at the shared memory and generating a protect signal upon receiving the same address from the modem and the AP.